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ABSTRACT

The research study uses available data from the Comprehensive Career Education Model (CCEN) to examine relationships between diffusion factors and the acceptance of the developed curriculum units. A brief overview of the project is provided with recommendations for designing linkages among curriculum development agencies. The data came primarily from documentary records, evaluation reports, and teacher questionnaire responses, which provide the basis for analyses of the teacher acceptance of the curriculum units. Forty-one field tested career education curriculum units formed the focus for the research. The report examines the following diffusion-related variables: use of a temporary system as a device for linking a prime contractor with local education agencies, and teacher acceptance of the curriculum units in the field-test sites. Several independent variables were related to the teacher acceptance of the curriculum units: (1) teacher characteristics (race, sex, education level, and years in teaching); (2) degree of curriculum unit revision; (3) unit development site location; (4) infusibility of the concepts and the units; and (5) perceived effect of teaching the unit on teacher interaction with the class and the community. Appended are: statistical tables showing the data and data analysis, questions used to measure the variables associated with teacher acceptance, a glossary, and a bibliography. (Author/NW)

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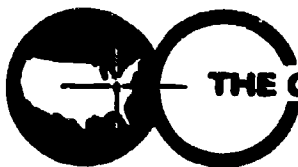
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Diffusion Factors Associated with the Comprehensive Career Education Model Development and Acceptance of the Curriculum Units in Field Test Sites

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**DIFFUSION FACTORS ASSOCIATED WITH THE
COMPREHENSIVE CAREER EDUCATION MODEL
DEVELOPMENT AND ACCEPTANCE OF THE
CURRICULUM UNITS IN FIELD TEST SITES**

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February 1974

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FOREWORD

The development, distribution, and utilization of curriculum materials on a national basis demands accurate information on the acceptability of the materials to teachers, the ultimate users of the products. This research study used available data from the Comprehensive Career Education Model to examine relationships between selected diffusion factors and the acceptance of the developed curriculum units. A brief overview of the project is provided with recommendations for designing linkages among curriculum development agencies.

In addition to the authors of the publication, William L. Hull, Randall L. Wells, and Charles J. Gross, we wish to acknowledge the assistance of other program staff in the collection of data for the study and in the review of early drafts of the report: Lois Harrington, technical assistant; and Ralph J. Kester, research specialist.

We appreciate the scholarly reviews of the publication by Gary Borich, University of Texas at Austin and Trevor G. Howe, Iowa State University. Their contributions have resulted in a more complete and readable report.

Robert E. Taylor
Director
The Center for Vocational Education

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BACKGROUND OF THE STUDY

Introduction

Sidney P. Marland, Jr., during his tenure as Assistant Secretary for Education in the U.S. Department of Health, Education and Welfare, sparked a quiet revolution in American education. This "revolution" took the form of initiatives in the Office of Education to stimulate career planning for youth and adults in primary and secondary education. This career education movement attempted to eliminate barriers, real or imagined, to the development of salable skills and other abilities prerequisite to a rewarding and fulfilling life. The implementation of such a concept in American education faced rather formidable odds considering the traditional emphasis on academic scholarship in this country. The translation of a small part of this movement, the development of the school-based experimental model of career education, into tangible products with potential for impacting on students in school systems is the subject of this report.

This study of the Office of Education initiatives in career education has been delimited to the school-based model as it developed between September 1971 and August 1973. The research was focused on two aspects of the Comprehensive Career Education Model (CCEM): (1) the development and use of a temporary system to establish linkages between the prime contractor, The Center for Vocational Education (CVE), and six local education agencies who subcontracted to develop and test curriculum units, and (2) teacher acceptance of the first forty-five curriculum units that were field tested during the 1972-73 school year.

No attempt has been made to review the literature or provide a comprehensive synthesis of the career education movement in this report. Readers interested in a historical perspective are referred to Herr's synthesis (1972) of legislation and other conditions that have contributed to increased interest in career education. Rather, the intent of this report is to highlight diffusion factors that seem to have influenced the development and acceptance of the CCEM curriculum units.

Statement of the Problem

The task of unifying all of education around a career development theme was pursued by government agencies through a variety of means. Funds from the Office of Education for exemplary programs were earmarked for career development projects, incentives were built into the program to encourage states to allocate their share of federal funds to focused, concentrated activities, and four

career development models were initiated by the National Institute of Education. Programmatic research and developments efforts were hampered by the lack of a clear, concise definition of career education.

The existence of fifty different state systems of education did little to encourage efficient use of federal funds to develop and implement career education. On the other hand, the fifty different funding sources for career education stimulated many diverse and unique solutions to the problem of implementing career education.

Some energy was dissipated arguing the merits of different approaches to the development of career education. The topic attracted many advocates and some adversaries in our pluralistic society.¹ In some cases only labels of courses may have been changed to accommodate the national interest in the career development theme.

The school-based model of career education represented a significant attempt to capstone some of the ongoing career development efforts in the states. As the project developed, it became necessary to spend more and more time in the development of materials to assure the teaching of career development themes. The procedures used to conduct this development activity and establish linkages among the contracting agencies are the subjects of this report.

The study of linkages between contracting agencies is important if curriculum materials are to be developed efficiently and impact on target groups in an effective manner. Problems associated with the definitions of scopes of work, the meeting of time deadlines, and management of personnel must be solved if education is to have maximum impact on pupils during periods of limited resources. One of the key actors in the development and use of curriculum materials is the teacher. She must take the output from the development effort and determine if it has value for instructing students. That is the reason this study used teacher acceptance of the curriculum units developed by the school-based model as the criterion variable. Ultimately, all aspects of career development projects must impact on students either in the classroom or in other learning environments.

Objectives of the Study

The development of career education curriculum units on a national scale that are usable in local education agencies presented a unique opportunity to study diffusion variables from both a developmental and product perspective. It was difficult to identify specific a priori variables that would impact on curriculum development processes and the acceptability of the curriculum units because the CCEM project was refocused several times enroute to its objectives. The "comprehensive" model became less extensive as the development tasks became more evident. The two objectives

¹For example, the National Urban League took a very cautious position in the promotion of career education among black educators. See the Educational Policy Information Center Bulletin, Vol. 1, No. 1, Summer 1972.

for this study reflect this progressive refinement of CCEM outputs. The first objective is couched in a case study frame of reference. The second objective is more specifically targeted on the primary products of the CCEM, the curriculum units.

- Objective 1. To gain insights into the process of developing curriculum units using a temporary system as a linking agent from the prime contractor to local education agencies.
- Objective 2. To isolate and study selected diffusion factors which had an opportunity to influence the acceptance of the CCEM curriculum units.

The second objective used the forty-five curriculum unit field test to answer the following questions:

1. Can the acceptance of the curriculum units be predicted from teacher demographic variables of race, sex, education level, and years in teaching?
2. What effect does the degree of curriculum unit revision have on teacher acceptance of the unit?
3. Are curriculum units that have been developed on site more acceptable to teachers than units developed at another local education agency?
4. Are the career education concepts infusible into regular classroom programs?
5. Are the units infusible into the regular curriculum?
6. Did the curriculum units enhance teacher interaction with the class and the community-at-large?

Other characteristics of the curriculum units were summarized on the basis of the existence of any flagrant bias perceived in the units and the degree of unit-specific in-service training required. No attempt was made to address the question of unit quality. This research accepted the units in their field test form for the analysis of diffusion-related questions.

Career Education: Definition

Career education has yet to achieve a precise and widely accepted definition. However, certain dimensions appear to structure most discussions of it. Fundamentally, career education is a movement for reform of American education resting upon a positive philosophical commitment to the values of work-oriented society.² Developing an appreciation for the dignity and worth of work is an elemental goal

²Gordon I. Swanson, "Career Education," a paper prepared for The Center for Vocational Education, September 1971, p. 4.

of career education. A second major dimension is the central focus of career education. It seeks to integrate and direct education around individual career development. Thus education should become an integrated, cumulative series of learning experiences having as its objective "the development of knowledge and of special and general abilities to help individuals interact with the economic sector."³ A related emphasis is the determination that every student shall leave an educational institution with a marketable skill. A third dimension is the comprehensiveness of career education. It is a total program for all students regardless of their backgrounds or aspirations. Fourthly, career education recognizes the primacy of the individual in a democratic society. It seeks to help each individual achieve increased power to make relevant decisions about his life and increased skill in the performance of his life roles.⁴ These roles are not limited to the economic sphere. They also include the home, community, avocational, and religious aspects of life. Fifthly, career education is an open continuing system allowing individuals to leave and enter educational and training programs at any point in their lives. Occupational patterns change rapidly and in an unpredictable manner in our technologically oriented society. Many individuals desire to switch careers in midlife. Career education places a heavy emphasis upon adult and continuing education. A related dimension is the concern for follow-up programs operated by the educational institutions involved in career education. Job placement and continuing program improvement through evaluation and feedback must be incorporated into a truly comprehensive program focused upon careers. To summarize, career education is an effort to reform the entire spectrum of American education. Its objective is to insure that all students will be equipped with the attitudes, occupational information, marketable skills, and decision-making abilities needed to make appropriate career decisions.

History of the CCEM Project

The Comprehensive Career Education Model (CCEM) project has been undertaken as one viable alternative which directly addresses the problem of helping students to achieve self-fulfillment in a realistic, measurable way. The third report of the National Advisory Council on Vocational Education, July 1970, also identified this alternative by calling for a complete reform of the American educational system to include career education. The first movement toward actually implementing career education in public schools emanated from the U.S. Office of Education (USOE). Commissioner Marland (1971) expressed the view that "all educational experiences - curriculum, instruction, counseling, etc., should be geared to preparation for economic independence, personal fulfillment, and an appreciation for the dignity of work." In this project, the U.S. Office of Education has chosen to examine the potential of a career-oriented curriculum for making education more relevant for today's young people.

Early in 1971, the National Center for Educational Research and Development (NCERD), and the Bureau of Adult, Vocational and Technical Education (BAVTE) of the U.S. Office of Education

³ "Forward Plan for Career Education Research and Development," a paper prepared by the Career Development Task Force, NIE, April 1973, p. ES-2.

⁴ Keith Goldhammer and Robert E. Taylor, Career Education: Perspective and Promise, Charles Merrill, 1972, 296 pp.

cooperatively initiated plans for a career education model. A decision to establish four independently developed experimental models was made by the U.S. Office of Education. These four models would create a career-oriented program that would be (1) school-based; (2) employer-based; (3) home/community based; and (4) rural/residential-based.

CVE as Prime Contractor

In May 1971, The Center for Vocational Education at The Ohio State University submitted a proposal to bid for the role of project manager for the school-based model. Objectives of the project were to develop, test, and install a comprehensive career education system by structuring the existing educational program around career education objectives. An initial project grant of \$2 million was awarded to The Center for Vocational Education (CVE) on June 15, 1971. Project guidelines issued by USOE stipulated that the CCEM was to be developed in one or more urban or semi-urban local education agencies (LEAs) and that the project was to be implemented through a research and engineering effort directed by CVE.

Selection of Sites

The U.S. Office of Education outlined the following six-stage process for selection of local education agency (LEA) project sites for the school-based model:

1. Identification of LEAs that had pioneered in developing elements of the CCEM;
2. Collection of data on the identified LEAs and selection of the twelve most advanced in career education programs;
3. Orientation of prospective LEAs to the school-based CCEM, to proposed strategies, and to the LEA selection process;
4. Solicitation of proposals from LEAs desiring to subcontract as model sites;
5. LEA visitation by a USOE review team to verify data and obtain additional information about LEA capabilities; and
6. Nomination by a review team of two or three LEAs for participation in the program.

In order to secure a list of school districts meeting the established criteria, the USOE contacted its regional directors, the BAVTE, and state directors of vocational education. The names of other LEAs that had inquired about participating in this project were added to this list.

The initial list contained the names of fifty-three school districts as potential LEA project sites. This number was reduced to thirty-seven in the first screening process. The U.S. Office of Education eliminated those districts lacking necessary components. Those located in rural areas also were taken from the list since CCEM guidelines specified that participating LEAs must be located in urban or semi-urban areas.

A second screening reduced the number of candidates to thirteen districts having the strongest and most comprehensive existing programs of career education from kindergarten through twelfth grade. Included in the extensive set of selection criteria were: (1) innovative programs; (2) curricula, including various vocational and work-related programs; (3) business, industry, and public agency cooperation; (4) resources and support activities, such as in-service research and development; and (5) district commitment to the project.

Two visitation teams were selected by USOE to visit the twelve LEAs that had submitted proposals for subcontracts. After visiting their assigned sites, the evaluation teams met in Washington, D.C. with recommendations for the final selections. On August 9, 1971, USOE selected six sites.

A meeting was held September 1-3, 1971, at CVE with representatives attending from the selected LEAs. The purpose was for initial subcontracting talks and discussion of staff needs. LEA personnel were invited to attend an orientation session at CVE from September 22-24 for an explanation of the project tasks that lay ahead.

Documentation of Activities

One of the requirements imposed on CVE as prime contractor for CCEM was the establishment and maintenance of a documentation file. The documentation file was set up to be a very comprehensive filing system that would contain a copy of all records initiated in CCEM project functions in addition to other special areas.

Each of the six sites was charged with the responsibility of placing in the documentation file a record of all project activities which took place at that particular site. A copy of each document, telephone memo, piece of correspondence, etc., that originated at CVE in Columbus also was placed in the documentation file. A daily/weekly log was submitted by the site team director for each site. This section of documentation was not kept up to date by all sites.

Role of Technical Assistance Team

Each LEA site was provided a CVE resident project team to offer technical assistance, on-site consultation, and to serve as a direct liaison with CVE. This resident team was identified as the site staff, and was headed by a site team director.

As the main communication link between LEA and CVE, it was necessary for the site team director to maintain a good working relationship with the LEA project director and his staff. The role of the site team director represents the type of marginal role discussed by Havelock (1971) since it requires him to relate to two different agencies.

Development of the Career Education Matrix

Career education has been defined by the CVE CCEM staff and the six LEAs participating in the development of the school-based CE model as a "comprehensive program focused on

careers."⁵ This definition was operationalized through the development of a matrix of program goals.⁶ The matrix thus served as an "operational tool capable of providing a frame of reference for defining and evaluating curriculum and guidance units necessary for the delivery of career education."⁷ It has provided a means to select those units and evaluate their effectiveness once they have been installed. Moreover, the matrix has provided a means of articulating effort among participating LEAs and facilitated integration of the CCEM with their LEA programs.⁸

The matrix was developed using a modified Delphi technique by CVE in conjunction with the six LEAs participating in the CCEM program.⁹ A minimum of ten classroom teachers were required to serve on a matrix development committee at each LEA.¹⁰ Authoritative theories of human growth and development, curriculum development, guidance, social development, career development, and taxonomies of educational objectives were examined. As a result of this examination, eight principal elements of CE were identified. These included: career awareness, self-awareness, appreciations and attitudes, decision-making skills, economic awareness, skill awareness and beginning competence, employability skills, and educational awareness.¹¹ A matrix of 104 cells was developed by arraying each of these eight elements against thirteen grades, K through twelve.

Development of the Curriculum Units

The six local education agencies participating in the development of the school-based model represented those sites where progress was being made in career education. Therefore, it was appropriate to start the unit development activity by screening existing practices in the six LEAs for promising units. Units identified as strictly vocational education units or strictly academic units were excluded. Of the approximately 1,000 in-place units in the LEAs, 269 were selected for further study. Additional validation for the in-place units provided by the LEAs reduced the number of potentially useful units to 179.

⁵"Developers Anticipate Making Many Products Available Soon," D & R Report, Vol. 2, No. 6, Sept. - Oct. 1973, pp. 17-18.

⁶Ibid, p. 18.

⁷"Developmental Program Goals for the Comprehensive Career Education Model: Preliminary Edition," The Center for Vocational Education, The Ohio State University, August 1972, p. 3.

⁸Ibid, p. 3.

⁹Ibid, p. 12.

¹⁰"The Comprehensive Career Education Model, Progress Report," The Center for Vocational Education, The Ohio State University, July 1972.

¹¹"Developers Anticipate Making Many Products Available Soon," D & R Report, Vol. 2, No. 6, Sept. - Oct. 1973, pp. 17-18.

Concurrent with the LEA-based effort, a national search of noncommercial career education materials was in progress. The search was subcontracted to the Palo Alto Educational Systems, Inc. (PAES) of Scottsdale, Arizona. A total of 736 curriculum units were identified in this search.

The combined total of 915 units was subjected to a series of workshops that included participants from the six LEAs, CCEM, and CVE. The units were rated according to degree of development, subject area(s) covered, and quality. By mid-February 1972, 105 units had been selected for modification and potential installation in the LEAs during the 1972-73 school year. Contracts were negotiated with the LEAs to refine and pilot test specific units during the spring and summer months. This report addresses only the first forty-five units that were developed and field tested. The remaining units were on a different time table.

The units began to arrive at CVE in May 1972 following their pilot test in the LEAs. Each of the forty five curriculum units was reviewed by CCEM staff, recycled to the LEA when appropriate, and/or assigned to an editorial review board. This board included professional editors from the publisher, evaluators from the CCEM project, and curriculum developers. They edited the units, keeping in mind such considerations as length of the lessons for the targeted grade level, accuracy of facts, the existence of sex or race bias, and appropriateness of the resource materials. At the completion of this review the units were sent to the Government Printing Office; then they were packaged for the field test sites.

Conduct of the Field Test

The primary purpose of the field tests was to supply data to the project staff to assist with the revision of the curriculum units. A secondary purpose was to identify those units that were sufficiently effective in their first trial to merit further investment by NIE.¹² The tests were run in the winter of 1972 and in the spring of 1973 in a randomly chosen cross-section of twenty-four to thirty-six classrooms (for each unit tested) in three or more representative cities. Table A-1 shows the locations of the field test for each of the forty-one curriculum units studied.¹³ A seventh site, San Diego, California, was added due to insufficient availability of classrooms in the other sites to accommodate the evaluation design. The sites are coded in Table A-1 to protect the anonymity of the data sources. The numbers of the sites do not correspond to the order of the letters coded for sites in other tables in this report. Likewise the units are coded in a random order.

¹²This information was taken from the fourth draft of the field trial report dated May 14, 1973 prepared by the external evaluator, The Institute for Educational Development.

¹³Three of the forty-five units were not used in this study because a preliminary version of the field test instrument was used, and the results were not comparable. Teacher responses to one unit were not available.

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Characteristics of the Participating Local Education Agencies

The following brief description of the six local education agency demographics will allow the reader to become familiar with the settings that the sites represent. The number of schools and students in the project indicate the degree of involvement experienced by each site. No attempt has been made to compare sites with each other due to the very limited data on each site. These are the sites where the curriculum units were developed and field tested.

Site A

This site is located in an industrial city with a population approaching 85,000. The community has been described as being very volatile and one that cannot be manipulated. This industrial community is highly organized, with the union having a great deal of control.

A school board member vote of four-three enabled this site to enter the CCEM project. All thirty-five schools in the system are involved in the CCEM project. The system consists of twenty-seven elementary schools, six junior high schools, and two high schools.

Site B

The second site is a city with a population of about 80,000. The community is strongly supportive of the work ethic and is extensively involved in education due to its religious and social values. Employment in sales, clerical, or skilled work accounts for about 40 percent, blue collar or factory work is about 25 percent, and professional or managerial is about 15 percent.

The school system has all twenty-seven schools involved in the CCEM project. There are twenty elementary schools, five junior high schools, and two high schools.

The student population served is approximately 24,000. The racial proportion is approximately 80 percent white, 10 percent Mexican-American, and 10 percent other.

Site C

The third site is a subdistrict of a city school system. The population of the subdistrict is approximately 50,000. The population is highly mobile and the student body has been described as a racial and ethnic melting pot.

Factory or blue-collar jobs account for 30 percent employment; sales, clerical, technical, or other skilled positions make up another 33 percent. Another 20 percent are on welfare and 10 percent are Oriental.

Site D

This site is one administrative area from a nine area district. The population in the area is 95 percent white, with a minority of 3 percent Mexican-American and those with Spanish surnames.

Factory or blue collar workers total 40 percent, and the same number are in sales, clerical, technical, or skilled positions. Managerial jobs account for 8 percent and public assistance 5 percent.

The site is not a vocational community, although the area is served by an area vocational center. Eight elementary, two junior high schools, and one high school make up the administrative area that serves approximately 5,000 students. More than 90 percent of the student population are white, and about 8 percent are Mexican-American and those with Spanish surnames.

Site E

This site is located in a city with a population of about 36,000 where the work ethic is well established. Almost half the families are involved in manufacturing. Forty percent are employed in factories or other blue collar jobs, 30 percent are employed in sales, clerical, technical, or skilled occupations, and 15 percent are in professional or managerial jobs. Approximately 15 percent receive public assistance.

The entire school system is participating in the CCEM project. There are five elementary schools, one junior high school, and one high school. There are no vocational schools in the district that serves approximately 6,000 students. Seventy percent of the student body are white and 25 percent are black.

The community relations program is typically small town. Schools have had generally good support because they build on personal contacts with community leaders and leaders in the community tend to identify with school system personnel. There is a good relationship established with the local press and the community service clubs.

Site F

The sixth site consists of schools located within three of five school areas of a large metropolitan city. The CCEM project schools consist of nineteen elementary schools, one junior high school, and four high schools. Of the 15,000 students served by the CCEM project schools, 60 percent are black and approximately 40 percent are white.

About one-third of the families hold factory or blue collar jobs. Fifteen percent occupy sales, clerical, technical, or skilled jobs, and 15 percent are in professional or managerial positions.

The site team director reported there was some evidence of a serious racial issue at this location. Additional schools were added to the project for racial balance.

CHAPTER II

METHODOLOGY OF THE STUDY

Design and Conduct of the Study

The design of this case study was ex post facto in nature with most of the data coming from an analysis of documentary records that were in the form of phone memos, correspondence, and other anecdotal records. Relatively unobtrusive observations were necessary in order to minimize the disruption that data collection could cause to the project. The researchers had access to the external evaluator of the CCEM project, his evaluative reports, and selected Columbus-based CCEM staff members. The documentary data came from records extending through a fourteen month period beginning September 3, 1971.

A second phase of this case study examined teacher responses to questions measuring their acceptance of the CCEM curriculum units. The researchers wrote items for the teacher questionnaire used to evaluate the acceptance of the CCEM curriculum units. This dependent variable of teacher acceptance was used to answer the following question: Do curriculum units developed on the site of a local education agency gain greater acceptance than units developed by local education agencies external to the site?

The research team was made up of members of the Diffusion Strategies Program. This is one of the five program areas in the Research and Development Operations Division at The Center for Vocational Education. The Comprehensive Career Education Model project is directed from another division within CVE.

The relationship that existed between the research team and the project team was simply one of collaboration on a research endeavor. The CCEM staff provided the documentation and the diffusion research team analyzed the data and wrote this report. The CCEM documentation provided a means for studying significant project events in the implementation of a complex innovation.

Additional data has been made available to the project team by the external evaluation contractor for CCEM, The Institute for Educational Development (IED). The proposal submitted by IED was designed to enable IED to conduct the summative evaluation without duplicating the efforts of the internal staff in conducting formative evaluation. Several tasks were outlined by IED to be accomplished throughout the project. Reports were published upon completion of tasks and made available to CCEM project personnel.

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The following CCEM project reports and documents were utilized in the collection and analysis of site data:

1. Profiles of CCEM locations, April 14, 1972 - One in a series of three reports prepared by The Institute for Educational Development (in-house study by CCEM external evaluator);
2. A Comprehensive Career Education Model, Interim Report, March 2, 1972-- An interim report prepared by CCEM staff for USOE;
3. Attitudes Toward Career Education, February 15, 1972 A report prepared by IED;
4. Developmental Program Goals - Comprehensive Career Education Model, August 1972-- A report prepared by The Center and Westinghouse Learning Corporation for USOE; and
5. The Comprehensive Career Education Model, Progress Report, July 1972--A progress report prepared by The Center for USOE.

The Diffusion Program staff also had access to direct information from the external evaluator as an observer of CVE and all six project sites. No data collection e.g., interviews with site team directors, occurred on any of the local education agency sites. Researchers did not want to jeopardize relationships with the LEAs or confuse channels of communication with local personnel. The very limited budget for the research also constrained staff travel.

Site data on the teacher evaluation of CCEM developed curriculum units were collected by the external evaluator. CCEM staff provided this information to the authors of this report. Diffusion researchers had an opportunity to suggest items for measuring diffusion variables to the external evaluator. Several of the suggested items were used; they formed the basis of the measurement of the dependent variable of teacher acceptance of the curriculum units. (See the next section on instrumentation for more information on the dependent variable.)

Diffusion researchers were provided access to documents by members of the CCEM staff. Records of site team directors' Daily/Weekly Logs (which included space for lists of inhibiting and facilitating activities occurring on site) were reviewed. These specific entries were placed with others from correspondence, office and telephone memos, etc. to form critical incidents that described development and implementation activities within the sites.

The Diffusion Staff was interested in such things as the patterns and effectiveness of communication, the working relationships required by the type of temporary strategy system being used, the concerns of project staff for proper facilities and equipment, the attitudes registered by students, LEA staff and community, staff development requirements, and funding problems. The diffusion research staff looked for incidents that were unique to a particular site as well as those that were common concerns across the sites.

Significant incidents were recorded concerning the communication processes utilized by project staff, relationships that existed both at the site and with CVE, funding, and other operational matters.

Data on community relations, the student population, school staff, school calendar, and community demographics were examined. The section of this report on characteristics of the LEAs contains information on school and community demographics.

The conduct of the field test of the curriculum units was in the hands of the external evaluator of the CCEM project. A field test was designed that allowed data collection and comparisons on the units at the student and teacher levels. Much of the data collected was designed for revision of the units after the field test. Diffusion researchers were interested in teacher responses only since quality of the curriculum unit was a variable outside the scope of work for this study.

Although the CCEM project was funded in mid-1971, it required time to recruit staff and establish communications with appropriate individuals at CVE and LEA project staff. Therefore, documentation records for a fourteen month period were searched beginning September 3, 1971. The sample of incidents from this fourteen month period in the history of CCEM should have provided the optimum opportunity for observing interactions between the LEAs and CVE. The career education matrix was developed and much of the curriculum unit development was initiated during this period. The time frame for this research e.g., the actual recording of incidents from documentation, occurred during 1973. All of the forty-one units used in this study of unit acceptance among teachers were field tested during the 1972-73 school year. Data on these units did not become available until the fall of 1973. Diffusion researchers intended to use forty-five curriculum units for this study. However, three of the units were evaluated with a preliminary version of the field test instrument which did not yield results that could be compared with other units. Teacher responses to the field test instrument for one unit were not available.

The diffusion researchers recorded incidents from the documentation that were consistent with a conceptual framework for the diffusion of innovations¹⁴ developed earlier in the program. This framework and the experience of the researchers were the only guidelines used in selecting incidents to record. An attempt was made to select incidents that could be characterized as "typical" of interactions that took place among the contractors. Three staff members were used to record incidents; their experience in diffusion research ranged from one and a half years to six months.

Development of Instrumentation

Very little instrumentation was used to record incidents critical to the discussion of a temporary system as a strategy for linking a prime contractor with LEAs for the purpose of developing curriculum units. A form was developed which allowed incidents to be recorded by sender of the message, receiver of the message, the date, and the setting. The researchers were responsible for selecting incidents deemed to be typical of the content in the documentation.

¹⁴William L. Hull, Ralph J. Kester, and William B. Martin, A Conceptual Framework for the Diffusion of Innovations in Vocational and Technical Education, Columbus, The Center for Vocational Education, The Ohio State University, March 1973.

The questionnaire mailed to the teachers field testing the forty-one curriculum units was developed by the external evaluator in cooperation with the CCEM internal evaluation staff. Diffusion researchers submitted items for this instrument. Appendix B contains a list of the items used to measure teacher acceptance of the curriculum units in the study. A teacher could respond to one item without necessarily responding to another in the same manner. For example, a teacher could be willing to teach a unit again but be unwilling to recommend it to another teacher. The items were coded with the most positive response as one and the other responses in correspondingly higher numbers. This yielded a dependent score of teacher acceptance with favorable attitudes indicated as the lower scores.

This measure of teacher attitudes (acceptance of the units) differs from the measure of teacher attitudes used by the external evaluator in one respect: item number 59 "Before teaching this unit, how did you feel about the desirability and/or feasibility of introducing career education concepts to your students?" was not used by diffusion researchers. The rationale for the deletion of this item hinges on the diffusion researcher's use of teacher acceptance as a measure of the effects of the field test rather than an attitude of the teacher before she participated in the field test. The levels of the Cronbach's alphas (the measure of internal consistency) for the teacher acceptance variable in Table A-2 shows a range, except for one unit, of from .82 to .97 for the forty-one units tested.¹⁵ These alphas estimate reliabilities at relatively acceptable levels; they compare favorably with comparable internal consistency estimates computed by the external evaluator.

Analyses of the Data

This section of the report is limited to the statistical analyses conducted on the forty-one curriculum units evaluated during the field tests. Procedures used to process critical incidents from documentation were described earlier in this chapter.

It was necessary to analyze teacher acceptance of the curriculum units on a unit by unit basis since each unit was taught independently by individual teachers. See Table A-1 for the distribution of teachers responding to the field test instrument by field test site. In every case at least three different field sites were used to test the unit. A minimum of thirty classrooms were used as an objective for the field test of each unit.¹⁶ This procedure placed a conservative bias in these data and increased confidence in the results.

The teacher demographics were coded as follows: Education level (1 = some college, 2 = bachelors, 3 = masters, 4 = doctorate, 5 = other); race (1 = white, 2 = black and other); sex (1 = female,

¹⁵For further information the reader is referred to Lee J. Cronbach, "Co-efficient Alpha and the Internal Structure of Tests," *Psychometrika*, Vol. 16, 1951, pp. 297-334.

¹⁶Additional information on the field test of each unit can be obtained from the technical report produced by the Institute for Educational Development.

2 = male); and years in teaching (1 = 1 year, 2 = 1-2 years, 3 = 3-5 years, 4 = 6-10 years, 5 = 11-15 years, and 6 = 15+ years). Relationships among teacher demographics and acceptance of the curriculum unit were studied via regression analysis using individual teachers as the unit of measure. Analysis of variance tests were used when the field test teacher responses could be grouped within sites to form an analysis unit. Their mean score became the unit of measure. A chi square statistic was used to estimate the probability of random responses to questions on the infusibility of the curriculum units on teacher interaction with the class and the community. (See Appendix C for these questions as they appeared in the instrument.) The chi square was computed for each unit because the units were developed and taught independently. To estimate the probability of a random distribution of responses across all units, a χ^2 statistic was used.¹⁷ The computations for the statistic are contained in Appendix A. The results for the questions were significant.

Limitations of the Data

The reader should recognize that observations drawn from these field test data may not generalize for sites that have not engaged in a career education development effort. The six LEAs participating in the study were not "typical" adoption sites for career education products. They were selected because of ongoing development activities in the area of career education. The field tests, with the exception of a seventh site, were conducted in the same LEAs that developed the curriculum units. This allowed the diffusion researchers to study the NIH (Not Invented Here) syndrome;¹⁸ however, it posed serious problems for the application of the findings to other sites, particularly those sites viewed by developers and others as users of externally developed curriculum products. The LEAs participating in this project received funds and technical assistance via work agreements that are not typical of current curriculum development practices.

Likewise, the units tested do not represent a "known quantity" relative to career education. Table 4 arrays the curriculum units by elements of the career education matrix and grade level, but many of the units contain instructional objectives that impact on two or more elements of the matrix. Users of these research findings should go slow in applying these results to varied situations because of the many unknown variables which can intervene upon the use of curriculum units in varied settings.

Finally, there are many conditions inherent in the field test data that exist as artifacts of the field trials themselves. The researchers had no control over the availability of resource kits, the timing of the units as they were delivered to the teachers, or the sequencing of the units taught by a given teacher. To the degree these problems influenced the attitudes of the teachers towards career

¹⁷C. Radhakrishna Rao, Advanced Statistical Methods in Biometric Research, Hafner Publishing Company, Darien, CT, 1970, pp. 217-218.

¹⁸Frequently innovations may be rejected because they were not developed by the persons expected to use them.

education in general and the units in particular, the findings of this study would have less external validity. Nevertheless, this information should be useful to planners of field tests for curriculum materials because it can be assumed the attitudes reflected in the teacher responses are accurate for this study. Readers are reminded of the many interactions among the variables that were not studied directly and the potential difficulty of possibly not measuring all of the important variables that influenced the teachers' attitudes.

The data base for the case study represented a record that has been synthesized and reported through several project personnel before becoming part of the files. For example, if the LEA staff development coordinator encountered a problem, it was reported to the LEA project director. Frequently it was relayed to the site team director and to the proper person at CVE in Columbus. In addition, items such as telephone memos represented an interpretation by the person documenting the conversation. Most of the site data came to CVE from the site team director. He was the one who filed the Daily/Weekly Logs for the site. Site team directors differed on the type and amount of data reported or recorded in documentation. Some were dissatisfied with the reporting system and their entries to documentation were irregular.

Information reported from the sites lacked uniformity. Part of this discrepancy could have been due to the choice of data each site team director placed in documentation. Another reason for this difference was that the site settings were not comparable and therefore would not report the same incidents.

The site team director and other project personnel could have viewed the reporting activity as an opportunity to register complaints or to compliment the project efforts. Perhaps some of the records were based on what the site team director felt CVE wanted to hear from the site.

Information on the teachers' acceptance of the CCEM curriculum units was taken from cards containing field test data. This was the same data base used by the external evaluator in generating his reports of the curriculum unit field tests.

An attempt has been made by the authors to maintain anonymity of the field test sites whenever data were presented. This condition was extended to identification of curriculum units and the comments taken from documentation. This limitation on the data did not inhibit this case study mode of inquiry. The small number of development and field test sites would not have allowed comparisons among sites with any meaningful degree of reliability. Therefore, the sites were described briefly in the section on the history of the CCEM project and the only individual demographics were associated with the measure of teacher acceptance of the curriculum units.

CHAPTER III

A TEMPORARY SYSTEM AS A LINKING AGENCY

A temporary system was established between each LEA site and The Center as the strategy for the research, development, and implementation of CCEM. This interorganizational arrangement served as a link between each LEA client system and The Center. This type of linker model was explained by Havelock (1971); likewise he also discussed the marginal nature of linkers as they translate the goals and values of one system to another.

Each LEA site was provided a CVE resident project team to offer technical assistance, on-site consultation, and direction as needed to solve individual LEA problems in achieving a comprehensive career education program. This resident team was identified as the site staff and was headed by a site team director. Other staff members sometimes included research, evaluation, and curriculum specialists.

In addition to the site team, there was an LEA staff headed by a project director. Again, makeup of the staff reflects the major work functions that were established for the project. These were Project Management, Project Systems Coordination and Documentation, Curriculum, Career Preparation, Guidance and Placement, Support Systems, Community Development, In-Service, and Evaluation.

The site team director also served as a direct liaison with CVE. As a linking point for communications, it was necessary for the site team director to maintain good working relationships with the LEA project team. The site team director answered directly to CVE and filed a daily/weekly log which described project activities at that particular site. Due to this linking role, a great amount of the documentation was from the site team director.

Various degrees of cooperation occurred at each of the six sites. One site team director had no problem with local control, while another decided to "work for the LEA project director." Most of the site teams tended to identify with the LEA rather than CVE.

Role Definition and Maintenance

Probably the single most important issue surrounding the implementation of the Comprehensive Career Education Model was the definition of the roles played by the site team director and the LEA project director. These two individuals were forced to interface in a manner most beneficial to

the project. The opportunities for personality conflicts and overlap of responsibilities were great. Many requests were made to CVE to clarify the domain of the site team director and the LEA project director. This problem generated great concern in one site where the LEA project director was named at the last minute to head the LEA project team. Interest in the project was affected by the other responsibilities assigned to this person by the LEA. One site team director reported, "There are at least three of the site team directors who are experiencing serious degrees of frustration in the playing of their roles of liaison between LEA sites and CVE. Reasons for this range from rather routine operational problems to serious individual philosophical differences."

The differences that existed between some of the site team directors and LEA project directors were accentuated by (1) the distance between the Columbus-based CVE organization and the local education agencies, and (2) the desire for autonomy experienced by professionals accountable to local publics. In some cases, the CCEM project was only one of several federally funded programs ongoing in the school district. The site team directors experienced all of the problems associated with the knowledge-linker roles identified by Havelock (1969, p. 7-8): marginality, serving two masters, knowing the needs, over-isolation, and structural redundancy. The physical proximity of the site team director, who filled a temporary position, made it easy for him to identify with local priorities. The members of the CVE site team were perceived as "members of the team" in the LEA site. On the other hand, time and money tended to limit the amount of coordination that could take place between Columbus and the field sites. Site team members were expected to function on-site; they were to use the telephone and the mail for coordination purposes. The mail resulted in time delays and the system of documentation for phone conversation became burdensome. The dynamic time lines and changes in responsibilities for positions in Columbus and at LEAs made it difficult to always direct a question to the appropriate individual.

Operationalizing the responsibilities of the LEAs presented difficult coordination problems. The diversity of influences on the LEA made each site unique. For example, state law at one site prohibited administering attitude inventories with socioeconomic indicators to students or community members. Personnel at another site did administer the instrument to a select group of students whose parents gave permission even though they had objections to some of the questions. The variations in site settings mentioned in Chapter I indicate great differences among the LEAs. Some LEA project directors had to clear actions through several more layers of bureaucracy than others. Implementing the CCEM project seemed to run into greatest difficulty whenever teachers were needed. Project activities ran into some difficulties in one site when the superintendent and his assistant both opposed taking teachers from classes for twenty days to work on the matrix committee. This situation was corrected when two groups of ten teachers were rotated for the required time. Special arrangements had to be established at another site for teacher involvement. During teacher negotiations an addendum to the teacher's contract was necessary calling for two weeks' time for training prior to implementing CCEM.

These comments highlight the need to define role responsibilities of the contracting agencies at the time the agreement is made. Obviously, every detail cannot be anticipated, but an understanding of the functions to be performed by the agencies and staffs which support a temporary system is essential.

Technical Assistance

The technical assistance provided by CVE to the LEAs and vice versa was limited by the nature and scope of the staff roles in the temporary system. Flexibility in operating procedures was allowed by CVE on sites. For example, in-service education programs for teachers using the curriculum units varied from site to site. Always, the sites were constrained by lack of lead time and money. Witness the comment of one site team director, "[There is a] need for careful training of staff, but we haven't time, maybe it's too little expertise." The sites were treated differently by CVE in the amount and scope of work allowed in additional subcontracts. This allowed sites with unique expertise to make additional contributions to the CCEM project.

Reports on the quality of consultation provided to the sites by temporary systems staff personnel and others varied. One site reported their workshop consultants thus far had not been very good, while others felt the consultants had done a fine job.

Generally, the LEA sites responded very well to the need for physical space and other resources required by the temporary systems team. Nothing appeared in documentation which expressed a dissatisfaction with the facilities that were provided. An entire elementary school facility was allocated to the CCEM project by one school district. Equipment appeared to be a greater problem than housing. At least one site team director felt his sense of urgency was not shared by LEA colleagues.

The short time frame for the CCEM project caused problems in staffing and planning. Frequently temporary systems teams started negotiated scopes of work without having all positions filled. Plans had to be made for activities to be conducted within unrealistic time frames. The following comment is from site personnel: "We have found it impossible to project a time schedule that would appear to be reasonable. I personally continue to have problems by deadlines. Everyone sets them, but most seem to be unreal and most are not met. The result is they tend to be ignored." Not infrequently, missing the time deadline placed project activities out-of-phase with school year schedules. Part of the problem seemed to be caused by the slowness in the mail delivery system. CVE requested a form from one site which claimed it had been sent two weeks prior to the request. Allocations for September were on the form and were desperately needed. Another incident reported units mailed from CVE had not reached the LEA in seven days.

Endorsement by School Officials

Throughout the CCEM project, school officials exhibited commitment to the success of the project. This was particularly true of interactions they had with community groups. One site team director reported the "Board of Education is solidly in favor of career education." Most of the sites developed first-class materials for use as public information. The sites developed a tape presentation on career education, career education expositions, brochures, newspaper and journal articles, and a film on career education.

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Commitment to the CCEM project extended to other agencies in many of the states. State funds were channeled into the project sites for such prescribed activities as evaluation, job placement, computer assisted guidance, and teacher education. This additional state funding varied among sites, with one receiving as much as \$369,000. The State Department staff was reported to be helpful to one site in gaining significant theoretical knowledge of elementary grade "exploration" potential. Colleges and universities within the six states were instrumental in developing and teaching courses in career education. At the end of a two-week course in one state university, there was an interest expressed to be involved in future activities relating to career education.

Summary

The complexity of the innovation being developed by CVE and the diversity of staff and community settings present among the LEAs presented a rather formidable challenge to the temporary system designed to develop the curriculum units. The site settings varied from one where a strong work ethic brought about cooperation to another site that has been described as highly volatile, cannot be manipulated, and required a "hard sell job." Career Education deals with underlying educational and social issues frequently involving questions of values. This tended to encourage various exhibitions of resistance or cooperation by representative groups of varying persuasions. Communication, always a problem in large bureaucratic organizations, was difficult due to the unrealistic time deadlines and the complexity of the tasks to be completed.

On the other hand, support for career education was evident in each of the LEAs and their communities. Resistance to project activities could usually be traced to short time frames, miscommunication, or pressing work loads. Staff, facilities, supplies, and equipment were generally adequate at most sites. Funding arrangements sometimes presented problems whenever there were delays in planning, budgeting, and allocating funds.

Agencies planning linking strategies for bringing about the utilization of curriculum units should be advised of the need for strict role definition and follow-up supervision to "make the system work." When activities are not completed on schedule, supervisors need to determine "probable cause" and remedy the situation as soon as possible. Technical assistance with specialized tasks such as evaluation or in-service education can be very beneficial to a project, but it must be administered judiciously after positive interpersonal relations have been established among team members and between linking agencies. There is always a need for endorsement of project activities by school officials.

CHAPTER IV

TRANSPORTABILITY OF CURRICULUM UNITS

Characteristics of Respondents and Curriculum Units

Any director of a nationwide project to develop curriculum units must be sensitive to the ability of those units to be used by teachers and others under varying conditions. Constraints such as time, teacher knowledge of the subject, and funds to supplement the units with student experiences outside of the classroom are examples of constraints that sometimes limit the effectiveness of developed curriculum units.

This study of the CCEM curriculum units was limited to the forty-five units that were field tested during 1972-1973. This field test included approximately thirty classrooms for each of the forty-five units. The classrooms were scattered throughout seven local education agencies. Six of the seven agencies were involved in the development of the units, but no teacher involved in the development of a unit was asked to field test the same unit. The seventh LEA was secured to complete the requirements for the evaluation design. The teachers came from a variety of backgrounds. Tables 1 and 2 describe the demographic characteristics of the teachers who taught the units and responded to the field test evaluation instrument. Most of the teachers were white females with a bachelor's degree and less than three years of teaching experience. Females outnumbered males by a ratio of 3.8 to 1. Blacks accounted for most of the persons of minority races. A few American Indians, Mexican-Americans, and Orientals were represented. Table A-1 in Appendix A illustrates the distribution of the teachers among local education agencies. In no instance were the field tests of a unit equally distributed among the local education agencies. The local education agency and the curriculum units are not identified by name in an effort to maintain the anonymity of respondents.¹⁹

The original intent of the CCEM project was to provide a "capstone" to career development activities already in progress among the local education agencies selected to participate in this curriculum development activity. As the project progressed, the need for new curriculum materials became evident. This need is observable in Table 4 which shows a distribution of the curriculum units by grade levels and elements of the career education matrix. Additional units, beyond the forty-five, were developed but this report is limited to the first forty-five units developed by the CCEM project. Actually, only forty-one units were studied due to two problems: (1) a preliminary version of the

¹⁹Additional information for each unit can be obtained from the field trial report produced by The Institute for Educational Development, 52 Vanderbilt Avenue., New York, N.Y.

Table 1

**Distribution of Respondents
by Sex and Race**

Race	Sex		Total
	Female	Male	
White	477	139	616
Black and Other ^a	284	55	339
TOTAL	761	194	955

^aTwenty-nine respondents failed to indicate sex.

Table 2

**Distribution of Respondents by Education Level
and Years of Teaching Experience^a**

Years of Teaching Experience	Education Level			Total
	Bachelor's Degree or Below	Master's Degree	Doctor's Degree or Above	
less than 1	175	2	—	177
1 2	237	2	4	243
3 5	162	30	4	196
6 10	113	35	3	151
11 15	48	27	1	76
15 or more	41	46	8	95
TOTAL	776	142	20	938

^aForty six persons failed to indicate years of teaching experience.

Table 3
List of Curriculum Units by Title

<u>Number</u>	<u>Title</u>
C-3	A Study of Forestry and Related Careers
C-4	Careers in Technology
C-18	How are Greeting Cards Created?
C-23A	Preparing for Career Decisions
C-26	Introduction to Measurement
C-27	Watching and Wondering
C-28	Basic Measurement and Related Careers
C-29	Just Me
C-33	Length and Area: Concepts, Skills, Tools and Workers
C-34	Volume Measurement and Its Application to Work
C-38	Your Attitude is Showing
C-39	Social and Biological Awareness and Development During Adolescence
C-45	Understanding Self
C-51-1	Developing Locomotor Skills
C-51-2	Physical Fitness Preparation for the World of Work
C-52	Making Toys Through Teamwork
C-53-1	Here We Go 'Round the Discovery Course: Developing Psychomotor Skills
C-53-2	Interpretive Movement
C-54	Economic Education Grade 2
C-57	Economic Education Grade 3
C-59	Careers in Art
C-61	Career Exploration in the Life Science
C-62	Career Exploration in the Earth Sciences
C-63	Career Exploration in the Physical Sciences
C-64	Your Health and Your Jobs
C-69	Child Development
C-73A	Career Exportation: Education Cluster
C-75	Economic Education Grade 1
*C-76	Becoming Aware of Needs and Responsibilities
C-77	Exploring the World of Work
C-78	Attitudes and Task Completion
C-79	School Skills: Now and Later
C-84	Career Education through Industrial Arts
C-85	Career Exploration through Mathematics
C-86	Math and the Economy
C-87	Money Management
C-91	Workers Around Us
C-94	Activities, Roles and Occupations
C-95	The Service Station
C-96	Community Workers
C-98	The Supermarket

*Unit not placed in Career Education Elements Matrix.

(Career Education curriculum unit titles and placement in Career Education Elements Matrix taken from: "Career Education Curriculum Materials, Preliminary Products List." Columbus; The Center for Vocational Education, The Ohio State University, August 30, 1973)

Table 4
Curriculum Units by Elements of the Career Education Matrix and Grade Levels

Grade Level	Self-Awareness	Educational Awareness	Career Awareness	Economic Awareness	Decision-Making	Beginning Competency	Employability Skills	Attitudes and Appreciations
K	C-27, C-91	C-26, C-91	C-91					C-91
1	C-29, C-51-1, C-51-2	C-75		C-28, C-75				
2	C-53-1, C-94 C-53-2, C-95 C-96	C-54	C-18, C-52, C-77, C-79 C-95, C-96	C-18, C-54		C-94	C-52, C-54, C-94	C-52, C-78, C-96
3		C-3, C-4	C-3, C-4, C-33, C-57, C-98	C-57	C-57	C-33, C-34		
4								
5		C-59	C-59		C-59			
6								
7	C-38, C-39	C-84	C-61, C-73A		C-84	C-84	C-84	C-38, C-84
8	C-85	C-85	C-62	C-85			C-62	
9	C-45	C-63	C-63, C-45	C-87			C-63, C-64, C-86	
10	C-23A				C-23A			
11	C-69		C-69					C-69
12								

evaluation instrument was used on three units; the results were not usable because the questions were different from the other units, and (2) the teacher responses to a fourth unit were not available.

The unit titles are listed in Table 3. Each unit was written to encourage student performance of particular objectives. The objectives, and subsequently the units, have been placed in a matrix, Table 4, of career education elements by CCEM staff members. In practice, the units were developed at different local education agency sites by teachers with varying perspectives and skills. Thus, the units bear no particular relationship to one another. This is the reason a unit, such as unit number C-91, contains objectives that build student performance capabilities in more than one element of the career education matrix. The objectives in the units, as with the elements of the career education matrix, are not mutually exclusive. The units should not be perceived as "validating" specific parts of the career education matrix.

Demographics Associated with Teacher Acceptance

This study of the diffusion factors associated with the development and acceptance of the CCEM curriculum units does not address the question of quality of the units. Undoubtedly many factors influenced the teacher acceptance of the curriculum units, e.g., the time of year the units were taught, the availability of resource kits to the teacher, and the sequence of the experimental unit with other units (career education or otherwise) taught by the teacher. These variables are considered artifacts of this particular field trial endeavor and they are not addressed in this study of diffusion factors. An attempt has been made to assign the variation present in the dependent measure of teacher acceptance of the curriculum units to demographic variables of educational level, race, sex, and teaching experience. Also, additional diffusion variables have been isolated for study: the degree of unit revision required; the effect of developing the unit on site; the infusibility of the career education concepts and units; the need for unit-specific in-service training; and the extent of interaction among the teacher, the class, and the community resulting from teaching the unit. All data are perceptual in nature; data analyzed are the responses of teachers who taught the units.

Education level appears to be the demographic variable most associated with race, sex, and years in teaching. Table 5 shows educational level to be most highly correlated with all other variables including the dependent variable of teacher acceptance. Education level accounted for the most variance in the regression analysis, 9 percent. In addition to education level, Table 6 lists the multiple correlations for race and sex. Years in teaching did not explain a sufficient amount of variation to be included in the regression equation. The Pearson product moment statistic was used to compute the correlation coefficient. Statistics associated with the regression equation can be found in Tables A-3 and A-4.

The total amount of variation explained by the regression analysis, 13.5 percent, is not great enough to place much confidence in the use of personal demographics as a means of predicting teacher acceptance of curriculum units.

Table 5**Intercorrelations Among Demographic Variables
and Teacher Acceptance of the Curriculum Units¹**

Variables	Education Level	Race	Sex	Years in Teaching
Education Level				
Race	.223			
Sex	.371	-.168		
Year in Teaching	.377	-.063	.166	
Teacher Acceptance	.303	-.246	.219	.090

¹With an N of 984 subjects, all correlations in the table are significant at the .01 level.

Table 6**Percentage of Variation in Teacher Acceptance
of Curriculum Units Explained by Demographic Variables**

Variable Added	Multiple R	Cumulative Percent of Variance Explained	F Value
Education Level	.303	9.17	99.096
Race	.354	12.50	37.395
Sex	.367	13.46	10.863

F, 3, 980 = 2.61 needed @ .05 level. The F value indicates the significance of the amount of variation explained by the addition of the next variable to the regression equation. See Appendix Table A-3 for the regression equation.

Diffusion Variables Associated with Teacher Acceptance

The direction of teacher acceptance on several of these variables is of major interest. The reader should keep in mind that a low score on the dependent variable indicates a high level of teacher acceptance. The teachers who were most accepting of the curriculum units had the lowest educational levels. Perhaps this indicates a certain willingness to try a new curriculum unit despite the disruption to the classroom routine? Blacks and other minorities, including women, had slightly higher levels of teacher acceptance of the units than whites and males. Years in teaching had little relationship to any variable other than an obvious positive correlation with education level.

The degree of revision which took place in the units may have influenced unit acceptability to teachers. Editorial boards and committees with representatives from the participating LEAs and CVE reviewed each unit. Revision of a unit could indicate a variety of factors: the appropriateness of the unit activities for a targeted grade level, the number of references to local conditions that would have to be edited out for national distribution, or the biased perspective of the unit developers. The units were rated by the CCEM staff member in charge of the revision activities. Several intervening variables were operating to provide less than a clear measure of unit revision. For example, the press of time during the unit revision process resulted in some of the longer units being set aside in order to process shorter units. When time ran out, the longer units received only minimum revisions. Table 7 shows the average level of acceptance for each group of units. The F of 2.24 contained in Table A-5 was not significant at the .05 level. Apparently, the degree of revision is not a good indicator of the acceptability of the units to teachers.

The evaluation reports on the forty-one curriculum units were examined for information on flagrant biases that may have been contained in the units. The overwhelming majority (92.7 percent) of the 928 teachers responding to the question on flagrant bias did not perceive any bias in the units. Written comments from forty-nine teachers indicated that the types of bias most frequently perceived were sexual and cultural; the list of biases included economic, ethnic, and racial. These data indicate that flagrant bias was not perceived as a significant factor affecting the acceptance of CCEM units by teachers.

Another variable of interest to diffusion researchers is the tendency of users of educational products to be more receptive to the product if they have had prior opportunity to develop or adapt it to local needs. This tendency is at cross-purposes with the need for transportable curriculum materials. The CCEM unit field tests provided an excellent opportunity to obtain empirical evidence on the acceptability of internally developed curriculum units compared to externally developed curriculum units. Eleven of the forty-one units were field tested in development sites as well as non development sites. These eleven units were selected for this comparison only. Table 8 compares the units selected for this study of development versus nondevelopment sites with the remaining units on the degree of revision variable. The selected units are skewed slightly to the minimum revision level, but essentially the selected units are typical of the total units on the distribution of this variable. This comparison provides some evidence of the degree to which the eleven units are representative of the forty one units. The mean scores of the teachers engaged in a field test at a given site were used as the sample unit; thus, the teacher acceptance score for each of the unit/site field tests should be relatively stable.

Table 7**Teacher Acceptance of Curriculum Units
by Degree of Unit Revision**

Degree of Revision	Number of Units	Average Level of Acceptance ^a
Minimal	11	10.92
Moderate	25	9.74
Extensive	5	10.26
TOTAL		10.12

^aUnits scoring lowest indicate the highest level of teacher acceptance.

Table 8**Distribution of Curriculum Units Selected for the Comparison
of Development Site Versus Nondevelopment Site**

	Degree of Revision			
	Minimum	Moderate	Extensive	Total
Selected Units	6	3	2	11
Remaining Units	5	22	3	30
TOTAL	11	25	5	41

Table 9 contains the results of the comparison between development sites and nondevelopment sites. The teachers at the development site perceived the units to be more acceptable than the teachers at nondevelopment sites, however, the difference was not significant at the .05 level. See Table A 6 for the F table. Apparently, teachers in field tests located within the local education agency site where the unit was developed felt a sense of ownership or identification with the unit that was not present at nondevelopment sites. This is a hypothesis, not a conclusion of this study.

Table 9

**Teacher Acceptance of Curriculum Units
by Relationship of Development Site to Field Test Site**

Unit Developed	Number of Groups of Teachers	Average Acceptance ^a
Internal to the field test site	11	17.75
External to the field test site	38	24.01
TOTAL	49	22.61

^aThe lowest score indicates the highest level of teacher acceptance.

The ability of teachers to use curriculum units in a manner consistent with the intent of the developers of the units must be a high priority for any national curriculum project. The quality of an educational product which allows it to be used completely and pervasively in an educational program or curriculum may be called infusibility. Teachers participating in the field tests of the CCEM curriculum units responded to two questions that provide insights into the infusibility of the units. The first question referred to the ability of the teacher to fit the career education concept into the regular classroom program. Table 10 contains a frequency count of responses to this question. The results are in favor of the infusibility of the career education concept. The second question asked about the integration of the unit into the regular curriculum. Presumably, a school curriculum would be conceived more broadly than a classroom program. Over half of the teachers, as represented in Table 11, indicated the unit integrated well or very well into the regular curriculum. The distributions of responses to each of these questions were highly significant when compared to chance. Clearly, the teachers felt the units could be used easily in their programs and curriculums.

Table 10

Teachers' Perceptions of the Infusibility of the Concepts Contained
in the Curriculum Units into Their Own Regular Classroom Programs

Degree of Infusibility	Number of Responses	Percent of Responses
Yes	421	44.04
Somewhat	356	37.24
No	<u>179</u>	<u>18.72</u>
TOTAL	956	100.00

$$\chi^2_2 = 98.4 > 6.0 \text{ needed @ .05 level}$$

Table 11

Teachers' Perceptions of the Infusibility of the
Curriculum Units into the Regular Curriculum

Degree of Infusibility	Number of Responses	Percent of Responses
Very Well	215	22.56
Well	342	35.89
Somewhat	275	28.86
Poorly	79	8.29
Very Poorly	<u>42</u>	<u>4.40</u>
TOTAL	953	100.00

$$\chi^2_4 = 342.0 > 9.5 \text{ needed @ .05 level}$$

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Further substantiation of the transportability of the curriculum units is found in the teachers' perceptions of the need for unit-specific in-service training. Almost half of the teachers believed in-service training specific to the unit was not necessary! This lends credibility to the curriculum unit as a product package that is relatively self-installable. However, some of the teachers responding to the evaluation questionnaire were not present for in-service training; their opinions were recorded with those of other teachers.

Diffusion research suggests the need for teachers and other professionals in education to maintain relationships with non-educators in the community. Interactions among teachers, administrators, guidance counselors, and others at the school and/or district levels are considered healthy and supportive of innovative behavior. The CCEM curriculum units apparently had a positive effect, as perceived by the teachers using the units, on interactions with others both in and out of the school system. The frequency counts in Table 12 shows moderate increases in the interactions with classes and the community-at-large as a result of teaching the units.

Throughout this report, the authors emphasize the self-report nature of the data collected on the acceptability of the CCEM curriculum units to teachers. No attempt was made by researchers to verify responses or to monitor the collection of data in any way, however, the respondents taught the units. As participants in this curriculum unit evaluation activity, their responses represent one of the best sources of information about the units. The teacher of the unit must be convinced of its value if career education is to impact on American youth.

Table 12

Teachers' Perceptions of the Extent to Which CCEM Curriculum Units
Enhanced Interaction between Them and Their Classes
and the Community-At-Large

Extent of Interaction Enhancement	Number of Responses	Percent of Responses
Much Better	75	8.07
Better	305	32.83
About the Same	463	49.84
Worse	74	7.97
Much Worse	<u>12</u>	<u>1.29</u>
TOTAL	929	100.00

$$\chi^2_4 = 786.1 > 9.5 \text{ needed at } .05 \text{ level.}$$

FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS

The emergence of career education as a viable theme for reconstituting school curriculums resulted in many diverse and varied activities to create career education curriculum units. Not the least of these activities was the school-based model sponsored by the National Institute of Education and developed by The Center for Vocational Education. This model developed 135 curriculum units; the first forty-five of these were field tested. Forty-one of these units formed the focus for this research.

Examined in this report were the following diffusion-related variables: the use of a temporary system as a device for linking a prime contractor with local education agencies, and the acceptance of the curriculum units by teachers in the field test sites. Several independent variables were related to the teacher acceptance of the curriculum units: (1) teacher demographics of race, sex, education level, and years in teaching; (2) the degree of curriculum unit revision; (3) the location of the unit development site; (4) the infusibility of the concepts and the units; and (5) the perceived effect of teaching the unit on teacher interaction with the class and the community-at-large.

This study was ex post facto in nature. The data came from documentary records, evaluation reports, and teacher responses to the field test questionnaire. Critical incidents were recorded from telephone memos, correspondence, and other sources to describe the processes used to link CVE with the cooperating LEAs. No data were collected by the diffusion researchers themselves; all information came from secondary sources. Informal conversations were held with the school-based model staff. Questions on diffusion considerations were submitted to the external evaluator. Several were used in the final evaluation instrument. These questions formed the basis for analyses of the teacher acceptance of the curriculum units.

Findings

1. Role definition and maintenance are major factors influencing the success of a temporary system as a device for linking educational organizations.
2. Technical assistance to educational organizations in the process of developing, revising, and installing curriculum units should be flexible and adaptable to local conditions.

3. The expressed endorsement of the curriculum development activities by influentials within the development site is essential to the success of the project.
4. Education level explained a greater proportion of the variation in teacher acceptance of the curriculum units than race, sex, or years of teaching experience; the higher the education level, the lower the level of acceptance.
5. Blacks and other minorities had a slightly higher level of acceptance of the curriculum units than whites.
6. Females had a slightly higher level of acceptance of the curriculum units than males.
7. Years in teaching did not explain a significant amount of variation in teacher acceptance of the curriculum units when compared with education level, race, or sex.
8. The amount of revision required in the curriculum unit appeared not to influence teacher acceptance of the units.
9. Curriculum units field tested within local education agencies sites where they were developed received slightly higher ratings on teacher acceptance than the same units when they were field tested in non-development sites.
10. The teachers believed the concepts would fit easily into their regular classroom program.
11. The units were perceived by most of the teachers to integrate well into their curriculum.
12. Almost half of the teachers indicated the units could have been effectively taught without any unit-specific in-service training.
13. Interaction among the teacher, the classes, and the community was enhanced slightly by the teaching of the curriculum units.

Implications

1. Persons advocating use of the curriculum units should expect various exhibitions of organized resistance by representative groups of varying persuasions.
2. Position descriptions among members of the temporary system installation teams should be carefully written to assure the delegation of authority commensurate with responsibilities.

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3. Project officers should maintain surveillance and sensitivity to inter-personal relationships among members of the linking organizations and the client system and the resource system.
4. Incremental decision-making will be required to cope with unanticipated changes in product installation requirements.
5. Endorsement of curriculum development activities from influentials in the developing agency must occur periodically.
6. Teachers with more formal education tend to be somewhat more skeptical and less accepting of innovative curriculum units than teachers with less formal education.
7. Blacks, females, and other minorities should pose no special problems for the installation of curriculum units.
8. Apparently respondents in local education agencies where the unit was developed felt a sense of ownership that influenced the acceptability of the units.
9. The units were perceived to be relatively free of bias and the need for unit-specific in-service education; they are relatively transportable and infusable into regular classroom programs and curriculums.

Recommendations

1. Organizations contracting to develop or install educational products such as curriculum units should specify the obligations of linking agencies such as temporary systems in as much detail as possible at the time of the agreement.
2. A monitoring system should be developed to obtain feedback on the activities of linking agents to assure effective utilization of staff time and resources.
3. Whenever curriculum units are developed for national distribution by local education agencies' personnel, the personnel and sites should be somewhat representative of the national target population for that unit.
4. Teacher selection for adopting innovative educational products should be based on interest in the product or variables other than race, sex, formal education, or experience in teaching.
5. The installation of educational products into a local education agency should provide an opportunity for teachers and others to develop and/or adapt the product to local conditions.

APPENDIX A

Statistical Tables

- A-1 Number of Teachers Responding to the Questionnaire by Unit and Field Test Site**
- A-2 Alpha Level for the Teacher Acceptance Variable by Curriculum Unit**
- A-3 Statistics Associated with Variables in the Regression Equation**
- A-4 Multiple Regression Equation**
- A-5 Analysis of Variance of Teacher Acceptance Means by Degrees of Revision of the Units**
- A-6 Analysis of Variance of Teacher Acceptance Mean Scores by Location of Development Sites**
- A-7 Probabilities associated with Chi Square values by unit for the question "Do you feel that the concepts and the related learning activities presented in this unit would easily fit into your regular classroom program?"**
- A-8 Probabilities associated with Chi Square values by unit for the question "How well do you think the content of this unit would normally integrate into your regular curriculum?"**
- A-9 Probabilities associated with Chi Square values by unit for the question "Compared to the regular curriculum, how well did this unit enhance interaction between you and your class, and the community-at-large?"**

Number of Teachers Responding to the Questionnaire
by Unit and Field Test Site

Curriculum Unit Number	Local Education Agency						
	1	2	3	4	5	6	7
1	-	-	9	-	3	-	8
2	5	9	-	8	-	8	-
3	-	8	7	4	3	3	5
4	4	12	-	4	-	-	-
5	-	10	-	5	-	4	-
6	-	-	10	-	3	-	7
7	-	-	9	5	3	4	9
8	-	-	16	-	5	-	9
9	-	6	8	3	3	4	6
10	-	-	17	-	6	-	7
11	15	-	-	9	-	6	-
12	-	-	9	-	3	-	8
13	-	4	-	4	-	4	-
14	-	14	-	3	-	3	-
15	11	-	-	5	-	4	-
16	4	7	-	5	-	4	-
17	9	3	-	4	-	4	-
18	-	13	-	2	-	4	-
19	6	7	-	3	-	4	-
20	-	-	11	-	3	-	6
21	-	-	11	-	3	-	6
22	13	5	-	2	-	-	-
23	9	3	-	3	-	4	-
24	-	-	11	-	3	-	6
25	6	-	6	-	2	-	6
26	-	-	9	-	3	-	8
27	-	11	-	5	-	4	-
28	10	2	-	4	-	4	-
29	12	-	-	-	1	-	7
30	13	-	-	-	-	-	7
31	-	6	8	3	3	4	6
32	-	6	8	4	2	4	6
33	-	7	7	4	3	4	5
34	-	-	30	-	-	-	-
35	-	15	-	6	-	6	-
36	-	14	-	8	-	8	-
37	-	5	9	4	3	4	5
38	-	12	-	10	-	6	-
39	-	6	8	4	2	4	6
40	-	-	15	-	6	-	9
41	-	5	9	2	3	4	5

Alpha Level for the Teacher Acceptance
Variable by Curriculum Unit

Curriculum Unit Number	Alpha Level
01	.87
02	.89
03	.89
04	.86
05	.88
06	.88
07	.91
08	.85
09	.89
10	.91
11	.89
12	.93
13	.93
14	.83
15	.85
16	.90
17	.97
18	.92
19	.96
20	.87
21	.93
22	.97
23	.84
24	.64
25	.98
26	.87
27	.86
28	.97
29	.96
30	.90
31	.90
32	.89
33	.88
34	.82
35	.94
36	.85
37	.88
38	.87
39	.84
40	.90
41	.91

Table A-3**Statistics Associated with Variables
in the Regression Equation**

Variable	Regression Coefficient	Standard Error	t
Educational Levels	.224	.033	6.884
Race	-.178	.031	-5.807
Sex	.106	.032	3.296

$t_{\alpha} = 1.960$ needed at .05 level

Multiple Regression Equation

$$Y' = .223 X_1 - .178 X_2 + .106 X_3 + .882$$

where Y' = Predicted teacher acceptance

X_1 = Educational level

X_2 = Race

X_3 = Sex

Table A-5**Analysis of Variance of Teacher Acceptance Means
by Degrees of Revision of the Units**

Source of Variation	d.f.	Sum of Squares	Mean Square	F
Unit Revision	2	10.77	5.38	2.24
Within	38	91.40	2.41	
TOTAL	40	102.17		

$F_{2, 38} = 2.2379 < 3.25$, needed @ .05 level

Table A-6**Analysis of Variance of Teacher Acceptance Mean Scores
by Location of Development Sites**

Source of Variation	d.f.	Sum of Squares	Mean Square	F
Development Site	1	334.59	334.59	2.64
Within	47	5957.29	126.75	

$F_{1, 47} = 2.6397 < 4.04$, needed @ .05 level

Probabilities associated with Chi Square values by unit for the question "Do you feel that the concepts and the related learning activities presented in this unit would easily fit into your regular classroom program?"¹

<u>Curriculum Unit Number</u>	<u>N</u>	<u>Chi Square</u>	<u>Probability</u>	<u>log_e Pi</u>
1	19	4.5	.10404	-2.26336
2	30	3.8	.14957	-1.89712
3	30	3.8	.14957	-1.89712
4	20	19.9	.00005	-6.90776
5	19	3.9	.14263	-1.94771
6	19	8.3	.01564	-4.16099
7	30	20.0	.00005	-6.90776
8	30	14.6	.00068	-6.90776
9	30	4.2	.12246	-2.09973
10	29	1.1	.57609	-0.55165
11	29	16.6	.00025	-6.10640
12	20	6.7	.03508	-3.35241
13	19	22.8	.00001	-6.90776
14	20	29.2	.00000	-6.90776
15	20	19.9	.00005	-6.90776
16	20	9.7	.00783	-4.82831
17	17	10.7	.00473	-5.29832
18	18	9.3	.00941	-4.71053
19	14	1.9	.39515	-0.92887
20	17	3.6	.16146	-1.82635
21	18	7.0	.03020	-3.50656
22	20	20.8	.00003	-6.90776
23	19	3.3	.19564	-1.62964
24	20	1.3	.52205	-0.65009
25	16	1.6	.44375	-0.81193
26	20	9.1	.01057	-4.50986
27	20	6.1	.04736	-3.05761
28	18	3.0	.22313	-1.50058
29	17	4.4	.11344	-2.18037
30	20	4.9	.08629	-2.45341
31	24	4.8	.09301	-2.37516
32	30	2.6	.27253	-1.29828
33	30	4.2	.12246	-2.10373
34	30	16.8	.00022	-6.90776
35	26	9.5	.00849	-4.76942
36	30	2.6	.27253	-1.30000
37	30	9.6	.00823	-4.82831
38	26	4.0	.13534	-2.00248
39	29	4.6	.09921	-2.31264
40	30	9.8	.00745	-4.89431
41	27	6.9	.03192	-3.44202

¹Response categories are yes, somewhat, and no.

Probabilities associated with Chi Square values by unit for the question "How well do you think the content of this unit would normally integrate into your regular curriculum?"¹

<u>Curriculum Unit Number</u>	<u>N</u>	<u>Chi Square</u>	<u>Probability</u>	<u>log_e Pi</u>
1	20	11.2	.00370	-5.60800
2	29	13.7	.00105	-6.90776
3	29	3.4	.18461	-1.68740
4	20	29.2	.00000	-6.90776
5	19	4.5	.10404	-2.26336
6	20	12.4	.00203	-6.21461
7	29	16.8	.00022	-6.90776
8	30	31.2	.00000	-6.90776
9	30	7.8	.02024	-3.91202
10	29	4.6	.09921	-2.31264
11	30	6.2	.04505	-3.10109
12	20	3.1	.21225	-1.55117
13	19	19.1	.00007	-6.90776
14	20	24.1	.00001	-6.90776
15	20	24.7	.00000	-6.90776
16	20	19.6	.00006	-6.90776
17	17	1.5	.46557	-0.76457
18	18	4.0	.13534	-2.00248
19	14	0.1	.93100	-0.07150
20	7	8.6	.01193	-4.42285
21	19	3.9	.14263	-1.94491
22	19	11.5	.00322	-5.80914
23	19	3.9	.14263	-1.94771
24	20	1.3	.52205	-0.65009
25	16	2.4	.30498	-1.18744
26	20	20.8	.00003	-6.90776
27	20	6.1	.04736	-3.05761
28	16	7.5	.02209	-3.81671
29	17	14.6	.00068	-6.90076
30	18	4.3	.11458	-2.16600
31	24	13.0	.00150	-6.55461
32	30	4.2	.12246	-2.10373
33	30	14.6	.00068	-6.90776
34	30	25.4	.00000	-6.90776
35	26	10.2	.00600	-5.11600
36	30	15.0	.00055	-6.90776
37	30	13.4	.00123	-6.90776
38	26	8.6	.01347	-4.34281
39	30	14.6	.00068	-6.90076
40	30	16.8	.00022	-6.90076
41	27	8.0	.01832	-4.01738

¹Response categories were well, somewhat, and poorly.

Probabilities associated with Chi Square values by unit for the question "Compared to the regular curriculum, how well did this unit enhance interaction between you and your class, and the community-at-large?"¹

<u>Curriculum Unit Number</u>	<u>N</u>	<u>Chi Square</u>	<u>Probability</u>	<u>log_e Pi</u>
1	20	10.3	.00580	-5.15200
2	30	8.6	.01357	-4.29670
3	29	9.2	.01019	-4.60517
4	18	9.0	.01111	-4.50986
5	19	9.6	.00832	-4.82831
6	19	14.6	.00066	-6.90776
7	30	20.0	.00005	-6.90776
8	29	24.1	.00001	-6.90776
9	30	5.0	.08209	-2.50104
10	30	9.8	.00745	-4.89831
11	30	18.2	.00011	-6.90776
12	20	5.2	.07427	-2.60369
13	19	11.5	.00322	-5.80940
14	19	6.4	.04030	-3.21888
15	19	7.1	.02941	-3.54046
16	18	4.3	.11458	-2.16800
17	17	7.2	.02765	-3.57555
18	17	1.6	.45113	-0.79629
19	13	2.5	.29200	-1.23100
20	13	20.5	.00004	-6.90776
21	19	9.6	.00832	-4.82831
22	19	27.3	.00000	-6.90776
23	18	16.3	.00028	-6.90776
24	20	4.9	.08629	-2.45341
25	16	6.1	.04677	-3.05761
26	20	4.3	.11648	-2.15417
27	17	6.1	.04693	-3.05761
28	16	0.1	.93941	-0.06294
29	17	7.5	.02318	-3.77226
30	17	0.5	.79018	-0.23572
31	20	12.4	.00203	-6.21461
32	29	5.0	.08070	-2.51331
33	30	6.2	.04505	-3.10109
34	30	30.2	.00000	-6.90776
35	24	22.8	.00001	-6.90776
36	30	25.4	.00000	-6.90776
37	30	14.6	.00068	-6.90776
38	26	13.9	.00095	-6.90776
39	28	11.2	.00367	-5.72446
40	30	9.8	.00745	-4.88831
41	24	10.8	.00463	-5.29832

¹ Response categories were better, about the same, and worse.

Computations for the P_{λ} statistic associated with each of the following questions:

1. Do you feel that the concepts and the related learning activities presented in this unit would easily fit into your regular classroom program?

$$\begin{aligned}\text{total } \log_e P_i &= -146.757170 \\ -2 \times (-146.757170) &= 293.51 \\ \chi^2, 84 \text{ d.f.} &= 293.51 > 106.38 \text{ needed at .05 level}\end{aligned}$$

2. How well do you think the content of this unit would normally integrate into your regular curriculum?

$$\begin{aligned}\text{total } \log_e P_i &= -187.14999 \\ -2 \times (-187.14999) &= 374.30 \\ \chi^2, 84 \text{ d.f.} &= 374.30 > 106.38 \text{ needed at .05 level}\end{aligned}$$

3. Compared to the regular curriculum, how well did this unit enhance interaction between you and your class, and the community-at-large?

$$\begin{aligned}\text{total } \log_e P_i &= -183.98991 \\ -2 \times (-183.98991) &= 367.98 \\ \chi^2, 84 \text{ d.f.} &= 367.98 > 106.38 \text{ needed at .05 level}\end{aligned}$$

The P_{λ} statistic can be calculated as follows:

$P_{\lambda} = -2 \sum \log_e P_i$ where P_i is the probability associated with the observed value of the Chi Square variate for the i curriculum unit.

The probabilities and their logs for the Chi Squares by curriculum unit are listed in the preceding tables.

APPENDIX B

Questions used as a dependent measure of teacher acceptance of the curriculum units.

1. Overall, how would you rate the quality of this unit?
 - a) Very good
 - b) Good
 - c) Average
 - d) Poor
 - e) Very poor
2. Would you recommend this unit to other teachers?
 - a) Yes
 - b) Yes, with reservations
 - c) No
3. If possible, would you teach this unit to your students next year?
 - a) Yes, with no modifications
 - b) Yes, with minor modifications
 - c) Yes, with major modifications
 - d) No
4. Has teaching this unit changed your mind about the desirability and/or feasibility of introducing career education concepts to your students?
 - a) Much more favorable
 - b) More favorable
 - c) No change of opinion
 - d) Less favorable
 - e) Much less favorable
5. In general, did teaching this unit cause you to: (Circle all that are appropriate)
 - a) work with other teachers?
 - b) become excited about career education?
 - c) seek more information about career education?
 - d) increase your knowledge of career education?

APPENDIX C

Questions used to measure independent variables associated with teacher acceptance.

- 1. Do you feel that the concepts and the related learning activities presented in this unit would easily fit into your regular classroom program?**
 - a) Yes**
 - b) Somewhat**
 - c) No**

- 2. How well do you think the content of this unit would normally integrate into your regular curriculum?**
 - a) Very well**
 - b) Well**
 - c) Somewhat**
 - d) Poorly**
 - e) Very poorly**

- 3. Compared to the regular curriculum, how well did this unit enhance interaction between you and your class, and the community-at-large?**
 - a) Much better**
 - b) Better**
 - c) About the same**
 - d) Worse**
 - e) Much worse**

ACCEPTANCE	The use and approval of a product by an individual or organization. In this study teachers may not have felt completely free to reject the product (curriculum units) due to obligations incurred by the subcontracts. Therefore, the use of the term "acceptance" in this report projects an attitude of <u>approval</u> of the curriculum units.
ADOPTION	A decision to make full use of a new idea as the best course of action available. (Rogers and Shoemaker, 1971)
CO-OPTATION	A state in which one of two units is absorbed into the organizational structure and/or goals of the other.
CURRICULUM UNIT REVISION	This study used three levels of revision: minimum, moderate, and extensive. The rating for each unit was performed by the person responsible for the curriculum revision activities at CVE. The revision ratings were based on the extent of the changes in the units, the guidance provided for the learning activities, and the appropriateness of the evaluation procedures, among other criteria.
INFUSIBILITY	A quality of an educational product that allows it to penetrate a program or curriculum in a pervasive manner.
TRANSPORTABILITY	A quality of an educational product that allows it to be conveyed from one site to another with a minimum of loss of effectiveness.
TEMPORARY SYSTEM	A group of individual roles and organizational relationships that are established for a specified length of time to achieve a common goal(s). The school-based model used two teams of individuals as a temporary system linking CVE with the LEAs.

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